

Claims

- [c1] 1.A display device comprising:
a display panel having electrode wiring;
a circuit board for supplying voltage to said electrode wiring;
a sheet material for electrically connecting said electrode wiring to said circuit board;
a frame for holding said display panel; and
a restraint member for restraining said circuit board, said sheet material and frame from moving relatively from one to another in a plane direction.
- [c2] 2.The display device according to claim 1, wherein said restraint member is located in a path region of substantial propagation of stress resulting from a difference in coefficients of linear expansion between glass substrates constituting said display panel and said circuit board.
- [c3] 3.The display device according to claim 1, wherein said restraint member has a function of determining the relative positions of said circuit board, said sheet material and said frame.
- [c4] 4.A liquid crystal display device comprising:
a pair of glass substrates facing each other, each having electrodes for applying voltage to a liquid crystal material on a facing surface;
a circuit board for supplying said voltage; and
a liquid crystal driver tape carrier package for connecting said electrodes of said glass substrates to said circuit board and mounting a liquid crystal driver chip, wherein said liquid crystal driver tape carrier package and said circuit board anchor holes, and
anchor pins are inserted into said anchor holes, whereby said liquid crystal tape carrier package is fixed to said circuit board.
- [c5] 5.The liquid crystal display device according to claim 4 further comprising a frame for allowing said anchor pins to stand on a surface holding said pair of glass substrates, wherein said liquid crystal driver tape carrier package and said circuit board are fixed to said frame.

09681674-051301

- [c6] 6.The liquid crystal display device according to claim 4, wherein a pair of said anchor holes is located with said liquid crystal driver chip between.
- [c7] 7.The liquid crystal display device according to claim 5, wherein a grounding conductor is formed on said frame, and said conductive anchor pins are conductively connected to said grounding conductor.
- [c8] 8.The liquid crystal display device according to claim 4, wherein said liquid crystal driver tape carrier package is soldered to said circuit board via said pins.
- [c9] 9.A method of manufacturing a liquid crystal display device comprising glass substrates having electrodes wired for driving a liquid crystal material, a circuit board, and a sheet material having a conducting path, said glass substrates conductively connected to said circuit board through said sheet material, said method comprising the steps of:
mounting said sheet material having through holes in a predetermined region said glass substrates;
positioning said circuit board having through holes at positions corresponding the through holes of said sheet material so as to align the through holes of said circuit board with the through holes of said sheet material;
restraining said sheet material and said circuit board from moving at least in a plane direction through the through holes of said sheet material and the holes of said circuit board, thereby fixing said sheet material and said circuit board; and
restraining said sheet material and said circuit board from moving relative to a frame for holding said glass substrates at least in the plane direction through through holes of said sheet material and said circuit board, thereby fixing said sheet material and said circuit board.
- [c10] 10.The method of manufacturing a liquid crystal display device according to claim 9, wherein said restraining step further includes the step of inserting pins into the through holes of said sheet material and the through holes of said board.

09681674-051301

- [c11] 11.The method of manufacturing a liquid crystal display device according to claim 10, wherein said restraining step further includes the step of inserting pins into pin holding holes of said frame.
- [c12] 12.The method of manufacturing a liquid crystal display device according to claim 9, further includes the steps of providing an outer periphery of each of pins with solder, inserting said pins into the through holes of said sheet and the through holes of said circuit board, and soldering said sheet material to said circuit board by heating said pins.
- [c13] 13.A method of connecting a display panel to a circuit board in a display device comprising said display panel having electrode wiring, a frame for holding said display panel and said circuit board, comprising the steps of:
connecting said display panel to said circuit board through a sheet material having a conducting path, and
restraining said sheet material and said circuit board from moving relative to frame in a plane direction.
- [c14] 14.The connecting method according to claim 13, wherein said restraining step further includes the step of inserting pins standing in said frame into through holes formed in predetermined regions of said sheet material and said circuit board, whereby said sheet material and said circuit board are restrained from moving.
- [c15] 15.The connecting method according to claim 14, further includes the step of defining said predetermined region as a path region of substantial propagation stress resulting from a difference in coefficients of linear expansion between glass substrates constituting said display panel and said circuit board.